

**LISTING OF THE CLAIMS**

1. (Currently amended) A catheter for the aspiration, fragmentation and removal of removable material from hollow bodies, in particular of thrombi and emboli from blood vessels, the catheter comprising:

a working head (11) which that is axially displaceable over a guide wire, (6) is displaceable independently thereof the guide wire, and is arranged at the a distal end of the catheter, and which has at least one lateral opening (14); the catheter (10) having a flexible transport screw (13) which that has a distal and a proximal part and is capable of being rotated by means of a rotary drive (2) of a drive unit (1), which the rotary drive is being a distance away from the working head (11), and comprising:

a flexible tube (12) surrounding the transport screw (13), connected to the working head (11) and intended for removing the removable material or the detached thrombi and emboli fragments; and

a cutting tool (13);

wherein the transport screw (13) is in the forms of a shearing cutting tool in cooperationing with the lateral opening (14) of the working head (11) for comminuting the penetrating materials or aspirated and/or detached thrombi and emboli penetrating between the peripheral borders (13a) of the transport screw (13).

2. (Currently amended) A catheter for the aspiration, fragmentation and removal of removable material from hollow bodies, in particular of thrombi and emboli from blood vessels, the catheter comprising:

a distal and a proximal end;;

a working head (11) which that is axially displaceable over a guide wire (6)

independently thereof, and is arranged at the distal end of the catheter, and which has at least one lateral opening (14), the catheter (10) having;

a flexible transport screw (13) which has a distal and a proximal part, extends from the proximal to the distal end of the catheter, and is capable of being rotated by means of a rotary drive (2) of a drive unit (1), which the rotary drive is being a distance away from the working head (11), and the transport screw (13) being provided with transport surfaces which extend helically along its a longitudinal axis of the transport screw and in the a direction of radii of the transport screw, and comprising;

a flexible tube (12) surrounding the transport screw (13), connected to the working head (11) and intended for removing the removable material or the detached thrombi and emboli fragments, and

a cutting tool;

wherein the transport screw (13) is formed forms, in the region of the working head (11), as a shearing cutting tool in cooperationing with the lateral opening (14) of the working head (11), which and wherein the cutting tool, in the an operating state, continuously

commutes the penetrating material or aspirated and/or detached thrombi and emboli penetrating between the peripheral borders (13a) of the transport screw (13) and borders of the lateral openings (14) and

removes them along the transport surface in the a direction of the proximal end (7).

3. (Currently amended) A working head on a catheter for the aspiration, fragmentation and removal of removable material from hollow bodies, in particular of thrombi and emboli from blood vessels, the working head comprising:

which has at least one lateral opening (14);

wherein the catheter (10) having comprises:

a flexible transport screw (13) which that has a distal and a proximal part and can be rotated by means of a rotary drive (2) of a drive unit (1), which the rotary drive is being a distance away from the working head (11), and the transport screw (13) being provided with transport surfaces, and

a cutting tool,

wherein the transport screw (13) is formedcomprises, in thea region of the working head (11), as a shearing cutting tool which that cooperates with the opening (14) of the working head (11) and, in thean operating state, continuously

commutes the penetrating materials or aspirated and/or detached thrombi and emboli penetrating between the peripheral borders (13a) of the transport screw (13) and borders of the at least one lateral openings (14) and

removes them along the transport surface, and

wherein the lateral opening (14) of the working head (11) is in the forms of an L-shaped slot (14i, 14k, 14l, 14m) having a limb extending substantially in thea longitudinal direction and a limb extending along a part of thea circumference.

4. (Currently amended) The working head as claimed in claim 3, wherein thea ratio of thea width of the limb extending in the longitudinal direction to thea width of the limb extending in along the part of the circumferential direction is from 1.0 to 1.3.

5. (Currently amended) The catheter ~~or~~ working head as claimed in any of claims 1 to 4, wherein the distal part of the transport screw (13) in the region of the working head (11) is formed so as to be an exact fit in thean external diameter relative to thean internal diameter of

the a preferably substantially cylindrical working head (11), so that the external diameter of the transport screw (13) has only minimal diameter play relative to the internal diameter of the an inner lateral surface of the working head (11).

6. (Currently amended) The catheter ~~or~~ working head as claimed in any of claims 1-~~5~~, wherein the edges on the an outside of the transport screw (13) are formed so as to be sharp in the a region of the lateral opening (14) of the working head (11).

7. (Currently amended) The catheter ~~or~~ working head as claimed in any of the preceding claims 1, wherein the working head (11) tapers towards its the distal end (8).

8. (Currently amended) The catheter ~~or~~ working head as claimed in any of the preceding claims 1, wherein the edges (15) of the lateral opening (14a) are formed so as to be sharp at least in sections in the a region of the an inner lateral surface of the working head (11).

9. (Currently amended) The catheter ~~or~~ working head as claimed in any of the preceding claims 1, wherein the edges (15) of the lateral opening (14a) are formed so as to be rounded at least in sections in the a region of the an outer lateral surface of the working head (11a).

10. (Currently amended) The catheter as claimed in any of the preceding claims 1, wherein the lateral opening (14) is in the form of a slot.

11. (Currently amended) The catheter as claimed in claim 10, wherein the slot runs at least partially in the an axial direction of the working head (11).

12. (Currently amended) The catheter as claimed in claim 10-~~or 11~~, wherein the slot (~~14n, 14o, 14p, 14q~~) is formed, relative to ~~the~~a longitudinal axis of the working head (~~11n, 11o, 11p, 11q~~), at least partly along a helix.

13. (Currently amended) The catheter ~~or~~ working head as claimed in ~~any of~~ claims 3-~~to~~ 9 and 11-~~to~~ 12, wherein ~~the~~a width of the slot (~~14h~~) decreases toward ~~the~~a proximal end of the working head (~~11h~~).

14. (Currently amended) The catheter as claimed in ~~any of~~ claims 10-~~to~~ 13, wherein the slot (~~14i, 14k, 14l, 14m~~) is formed in an L-shape.

15. (Currently amended) The catheter ~~or~~ working head as claimed in ~~any of the preceding~~ claims 1, wherein, in ~~the~~a distal end region of the working head, (~~11b, 11f, 11g, 11q~~) at least one groove-like recess, (~~19a, 19b, 19e~~) starting from the distal end and opening in-to the lateral opening, (~~14b, 14f, 14g, 14q~~) is arranged on ~~the~~an outer lateral surface.

16. (Currently amended) The catheter ~~or~~ working head as claimed in claim 15, wherein ~~the~~a depth of the groove-like recess (~~19~~) increases toward ~~the~~a proximal end of the working head.

17. (Currently amended) The catheter ~~or~~ working head as claimed in claim 15-~~or 16~~, wherein ~~the~~a width (b) of the groove-like recess (~~19b~~) is greater than ~~the~~a chord (s) of ~~the~~an internal diameter of the working head (~~11f~~) in ~~the~~a region of ~~the~~a groove base.

18. (Currently amended) The catheter ~~or~~ working head as claimed in ~~any of the preceding~~ claims 1, wherein the working head (~~11a~~) is connected to the tube (~~12~~) axially in a manner resistant to tension and pressure.

19. (Currently amended) The catheter as claimed in ~~any of the preceding claims~~ 1, wherein the tube ~~(12)~~ has a reinforcement ~~(17)~~ in at least in one or more sections.

20. (Currently amended) The catheter as claimed in claim 19, wherein the reinforcement ~~(17)~~ is in the form of a metallic helix.

21. (Currently amended) The catheter as claimed in claim 19 or 20, wherein the reinforcement ~~(17)~~ is arranged on ~~the~~ an inside of the tube ~~(12)~~.

22. (Currently amended) The catheter as claimed in ~~any of the abovementioned claims~~ 1, wherein the tube ~~comprises~~ (12) is formed in two parts, ~~the~~ a proximal part, being in the form of comprising a plastic tube, and ~~the~~ a distal part, being in the form of comprising a metallic helical spring ~~(17)~~ having a thin-walled elastic plastic sheath ~~(18)~~.

23. (Currently amended) The catheter ~~or working head~~ as claimed in ~~any of the abovementioned claims~~ 1, wherein the working head ~~(11)~~ and/or the transport screw ~~(13)~~ consist of comprise metal, in particular of including stainless steel.

24. (Currently amended) The catheter ~~or working head~~ as claimed in ~~any of the above mentioned claims~~ 1, wherein the working head ~~(11)~~ is composed of comprises sintered ceramic, ~~or~~ metal ceramic or has a highly resistant layer, for protection from wear.

25. (Currently amended) The working head for a catheter as claimed in ~~any of the abovementioned claims~~ 3, as shown and described according to ~~in at least~~ one of figs. 4 to 80.